WHAT IS CLAIMED IS:

1. A characteristic region extracting device which comprises

an image data acquiring unit to acquire image data representing an image with pixels arranged in a dot matrix pattern,

an edge pixel detecting unit to detect the edge pixels of the image according to the image data,

a characteristic point extracting unit to extract the edge pixel as the characteristic point when a pattern formed by the detected edge pixels and their neighboring pixels is similar to a prescribed object to be extracted, and

a characteristic region defining unit to define as the characteristic region the prescribed region in the image which has the extracted characteristic points in large number.

2. The characteristic region extracting device according to Claim 1, wherein the characteristic point extracting unit is a dot-matrix filter formed with the filter value indicating the edge pixel and the filter value indicating the non-edge pixel, so that it compares more than one filter forming a pattern by the arrangement of each filter value with the edge detecting data after detection of the edge pixel and determines whether or not

the pixel corresponding to the center of the filter is the characteristic point.

3. The characteristic region extracting device according to Claim 2, wherein the filter is applied to each edge pixel at the time of comparing and the edge element to which the filter has been applied is defined as the characteristic point when the filter value indicating the edge pixel coincides with the edge pixel of the edge detecting data at more than two places.

4. The characteristic region extracting device according to Claim 1, wherein the pattern to be extracted is a pattern in which the edges form an angle larger 90° and smaller than 180°.

5. The characteristic region extracting device according to Claim 2, wherein the filter is a filter of 3x3 pixels, with adjoining four pixels (excluding the center) being the filter value indicating the edge pixel and other adjoining four pixels being a filter value indicating the non-edge pixels.

6. The characteristic region extracting device according to Claim 1, wherein the characteristic region defining unit divides the image into two or more regions having a prescribed number of pixels and defines as the

characteristic region the region in which the number of characteristic points exceeds a specific threshold value.

7. The characteristic region extracting device according to Claim 6, wherein the characteristic region defining unit computes the average value of the edge gradient of pixels contained in each the two or more regions and defines as the characteristic region the region in which the average value is high.

8. The characteristic region extracting device according to Claim 1, wherein the image data acquiring unit acquires the first image data indicating the first image and the second image data indicating the second image, and the characteristic region defining unit defines the characteristic region in the first image, and which further comprises a region comparing unit to compare the pixel in the characteristic region with the pixel in the second image.

9. The characteristic region extracting device according to Claim 8, wherein the region comparing unit compares the gray level of the pixel in the characteristic region with the gray level of the pixel in the second image and extracts the region in the second image in which the difference between two is small.

10. The characteristic region extracting device according to Claim 9, wherein the region comparing unit extracts the region for comparison which has the same size as the characteristic region in the second image and adds up the differences between the gray level of the pixel in the extracted region for comparison and the gray level of the pixel in the characteristic region, thereby defining the resulting summed value as the comparing value of the extracted region, and extracts the region in which the comparing value is small.

11. The characteristic region extracting device according to Claim 10, wherein, when the pixel in the characteristic region is the characteristic point, the region comparing unit extracts the pixel and its neighboring pixels which corresponds to the position of the characteristic point in the region for comparison, and, when these pixels are the characteristic points, adds the magnitude of difference between the gray level thereof and the gray level of the characteristic point in the characteristic region to the comparing value.

12. The characteristic region extracting device according to Claim 8, which further comprises a stitched image data creating unit to create the stitched image data which represents the stitched image formed by stitching together the first image and the second image by

superposing the region in the second image which has been extracted by comparison by the region comparing unit on the characteristic region.

13. The characteristic region extracting device according to Claim 1, wherein the image data acquiring unit acquires the first image data representing the first image and the second image data representing the second image, and the characteristic region defining unit defines the characteristic region for the first image and the second image respectively, and which further comprises a region comparing unit to compare the pixel in the characteristic region extracted in the first image with the pixel in the characteristic region and its neighboring regions extracted from the second image.

14. A characteristic region extracting device which comprises

an image data acquiring unit to acquire the first image data representing the first image and the second image data representing the second image, said image data representing an image with pixels arranged in a dot matrix pattern,

an edge pixel detecting unit to detect the edge pixels of the image according to the first image data and the second image data,

a characteristic point extracting unit to extract the

characteristic point in the first image and the characteristic point in the second image when a pattern formed by the detected edge pixels and their neighboring pixels is similar to a prescribed object to be extracted,

an arrangement pattern data creating unit to create the arrangement pattern data which indicates the arrangement pattern based on the extracted characteristic point in the first image, and

a characteristic region defining unit to reference the thus created arrangement pattern data and define as the characteristic region the region in which the characteristic point in the second image approximately coincides with the arrangement pattern.

15. The characteristic region extracting device according to Claim 14, wherein the arrangement pattern data is the data which specifies the relative position of the characteristic point.

16. A characteristic region extracting method which comprises an image data acquiring step to acquire the image data representing a first image with pixels arranged in a dot matrix pattern, an edge pixel detecting step to detect the edge pixels of the image according to the image data, a characteristic point extracting step to extract the edge pixel as the characteristic point when the pattern formed by the detected edge pixels and their neighboring pixels is

similar to a prescribed object to be extracted, and a characteristic region defining unit to define as the characteristic region the prescribed region in the image which has the extracted characteristic points in large number.

17. A characteristic region extracting program which temporarily stores image data representing an image in a prescribed storage medium and extract a characteristic region from the image, said program allowing a computer to realize

an edge pixel detecting function to detect the edge pixels of the image according to the image data stored in the storage medium,

a characteristic point extracting function to extract the edge pixel as the characteristic point when the pattern formed by the detected edge pixels and their neighboring pixels is similar to a prescribed object to be extracted, and

a characteristic region defining function to define as the characteristic region the prescribed region in the image which has the extracted characteristic points in large number.

18. A characteristic region extracting method which comprises

an image data acquiring step to acquire the first

image data representing the first image and the second image data representing the second image, said image data representing an image with pixels arranged in a dot matrix pattern,

an edge pixel detecting step to detect the edge pixels of the image according to the first image data and the second image data,

a characteristic point extracting step to extract the characteristic point in the first image and the characteristic point in the second image when a pattern formed by the detected edge pixels and their neighboring pixels is similar to a prescribed object to be extracted,

an arrangement pattern data creating step to create the arrangement pattern data which indicates the arrangement pattern based on the extracted characteristic point in the first image, and

a characteristic region defining step to reference the thus created arrangement pattern data and define as the characteristic region the region in which the characteristic point in the second image approximately coincides with the arrangement pattern.

19. A characteristic region extracting program which temporarily stores in a prescribed storage medium the first image data representing the first image and the second image data representing the second image and extracts a characteristic region from the second image which can be

superposed on part of the first image, said program ·
allowing a computer to realize

an edge pixel detecting function to detect the edge
pixels of the image according to the first image data and
the second image data stored in the storage medium,

a characteristic point extracting function to extract
the characteristic point in the first image and the
characteristic point in the second image when a pattern
formed by the detected edge pixels and their neighboring
pixels is similar to a prescribed object to be extracted,

an arrangement pattern data creating function to
create the arrangement pattern data which indicates the
arrangement pattern based on the extracted characteristic
point in the first image, and

a characteristic region defining function to reference
the thus created arrangement pattern data and define as the
characteristic region the region in which the
characteristic point in the second image approximately
coincides with the arrangement pattern.